

CLAIMS

What is claimed is:

1. A wireless repeater for receiving, amplifying and transmitting one or more
5 wireless signals comprising:

a signal processing device for determining one or more attributes of a wireless signal
received from a base transceiver station;

a memory for storing a reference list that includes a list of one or more preferred
frequency bandwidths to be amplified and transmitted;

10 a controller coupled with the signal processing device for comparing the one or more
attributes of the wireless signal from the base transceiver station with the reference list, wherein
the controller selects a first active set of one or more frequency bandwidths from the preferred
frequency bandwidths based on the comparison; and

a first reception filter coupled with the controller, wherein the first reception filter,
15 responsive to one or more control signals from the controller, filters out signals, communicated
to the first reception filter, having frequencies not within the first active set of frequency
bandwidths.

2. The wireless repeater of claim 1, wherein the one or more attributes includes a
20 frequency of the wireless signal from the base transceiver station.

3. The wireless repeater of claim 1, further comprising:

a first antenna coupled with the signal processing device for receiving the wireless signal from the base transceiver station;

a second antenna for receiving wireless signals from a mobile device; and

5 a second reception filter coupled with the second antenna and the controller, wherein the second reception filter, responsive to control signals from the controller, filters out signals, received with the second antenna, having frequencies not within a second active set of frequency bandwidths, wherein the second active set of frequency bandwidths is determined based on the comparison of the one or more attributes of the wireless signal from the base transceiver station
10 with the reference list.

4. The wireless repeater of claim 3, wherein the first and second active sets of frequency bandwidths comprise respective, corresponding sets of forward-link and reverse-link PCS communication bandwidths.

15 5. The wireless repeater of claim 4, wherein the corresponding sets of forward-link and reverse-link bandwidths comprise at least one forward-link communication channel and at least one corresponding reverse-link communication channel.

20 6. The wireless repeater of claim 3, wherein the first antenna comprises a donor antenna for communicating wireless signals between the base transceiver station and the repeater, and the second antenna comprises a coverage antenna for communicating wireless signals between the mobile device and the repeater.

7. The wireless repeater of claim 3, wherein the first and second sets of frequency bandwidths each include at least one respective contiguous range of frequency bandwidths, each of the respective contiguous ranges corresponding with one of a PCS communication band or block.

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8. The wireless repeater of claim 1, wherein the signal processing device comprises a digital signal processor.

9. The wireless repeater of claim 1, wherein the signal processing device comprises
10 a mobile device chipset.

10. The wireless repeater of claim 9, wherein mobile device chipset is a code division multiple access mobile device chipset.

15 11. The wireless repeater of claim 1, wherein each of the preferred frequency bandwidths in the reference list corresponds with a respective mobile communication network.

12. The wireless repeater of claim 11, wherein the reference list further includes, for each preferred frequency bandwidth, information designating the respective mobile
20 communication network.

13. The wireless repeater of claim 1, wherein the reference list comprises a preferred roaming list.

14. The wireless repeater of claim 1, wherein the wireless signal received from the base transceiver station is a sync-channel signal, and

one of the one or more attributes comprises a sync-channel message.

5 15. The wireless repeater of claim 14, wherein the reference list includes an expected sync-channel message for each of the preferred frequency bandwidths.

16. The wireless repeater of claim 14, wherein the signal processing device communicates the sync-channel message to the controller, and the controller compares the sync-
10 channel message with the reference list to determine the first set of frequency bandwidths.

17. The wireless repeater of claim 1, further comprising a display device for displaying a result of the comparison of the one or more attributes with the reference list.

15 18. A wireless repeater for receiving, amplifying and transmitting one or more wireless signals comprising:

a first antenna for receiving a wireless signal from a base transceiver station;

a signal processing device coupled with the first antenna for determining from the wireless signal from the base transceiver station, at least one of a frequency of the signal and
20 information indicating a wireless provider;

a reference list that contains preferred frequencies to be amplified and transmitted;

a controller coupled with the signal processing device for comparing at least one of the frequency of the wireless signal from the mobile device and the information indicating a wireless

provider with the reference list, wherein the controller selects a first active set of frequency bandwidths from the preferred frequency bandwidths based on the comparison;

a first reception filter coupled with the controller, wherein the first reception filter, responsive to control signals from the controller, filters out signals, received with the first antenna, of frequencies not in the first active set of frequency bandwidths;

a first amplifier coupled with the first reception filter for amplifying signals received from the first reception filter and

a second antenna coupled with the first amplifier for transmitting the amplified signals to a mobile device.

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19. The wireless repeater of claim 18, further comprising a second reception filter coupled with the controller, wherein the second reception filter, responsive to control signals from the controller, filters out signals, received with the second antenna, of frequencies not in a second active set of frequency bandwidths, the second active set of frequency bandwidths being based on the comparison of at least one of the frequency of the wireless signal from the base transceiver station and the information indicating a wireless provider with the reference list.

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20. The wireless repeater of claim 19, wherein the frequency bandwidths of the first active set of frequency bandwidths comprise forward-link PCS bandwidths in the frequency range of 1930 to 1990 MHz and the bandwidths of the second active set of frequency bandwidths comprise reverse-link PCS bandwidths in the frequency range of 1850 to 1910 MHz.

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21. The wireless repeater of claim 18, wherein the signal from the base transceiver station comprises a sync-channel signal and the information identifying the wireless provider comprises a sync-channel message.

5 22. The wireless repeater of claim 18, wherein the reference table comprises a preferred roaming list.

23. The wireless repeater of claim 18, wherein the signal processing device comprises a digital signal processor.

10 24. The wireless repeater of claim 18, wherein the signal processing device and the controller are included in a single electronic component.

25. A method of receiving, amplifying and transmitting one or more wireless signals
15 using a wireless repeater comprising:

receiving a wireless signal from base transceiver station;

determining one or more attributes of the wireless signal from the base transceiver station;

determining a first active set of frequency bandwidths by comparing at least one of the
20 one or more attributes with a reference list that includes preferred frequency bandwidths;

filtering out signals, received by the wireless repeater with a first receiving device, having frequencies not within the first active set of frequency bandwidths prior to amplifying and transmitting.

26. The method of claim 25, further comprising:

determining a second active set of frequency bandwidths based on the comparison of the at least one of the one or more attributes with the reference list;

filtering out signals, received by the wireless repeater with a second receiving device,

5 having frequencies not within the second active set of frequency bandwidths.

27. The method of claim 26, wherein the first active set of frequency bandwidths comprises forward-link PCS bandwidths and the second active set of frequency bandwidths comprises -reverse-link PCS bandwidths.

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28. The method of claim 25, wherein determining the one or more attributes of the wireless signal from the base transceiver station comprises determining a sync-channel message to be compared with the reference list to determine the first and second active sets of frequency bandwidths.

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29. The method of claim 25, further comprising displaying a result of the comparison of the at least one of the one or more attributes with the reference list.

30. The method of claim 29, wherein displaying a result of the comparison comprises
20 displaying information corresponding with at least one of a system identification and a network identification, wherein the system identification and the network identification are included in a sync-channel message.